

REMARKS

I. Status of Claims

Claim 1 is amended to incorporate the subject matter of Claim 10.

Claim 11 is amended to depend from Claim 1.

Claims 6-10 and 14-16 are canceled without prejudice or disclaimer.

No new matter is added, as the present amendment incorporates a pending claim into an independent claim. Thus, no new issues are raised, nor is further search or consideration required. Accordingly, Applicants respectfully request entry and consideration of the Amendment after a final Office Action. Upon entry of the Amendment, Claims 1-5, 11-13 and 17-23 will be pending. Claim 23 is currently withdrawn from consideration.

II. Response to Claim Rejections Under 35 U.S.C. § 102 and § 103 Based on Vangermain

Claims 1, 5, 17-19, and 22 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as allegedly obvious over Vangermain (U.S. Patent No. 3,526,645).

Claims 2-4, 9-14, and 20 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as allegedly obvious over Vangermain in view of Maskill (Howard Maskill, Mechanisms of Organic Reactions, New York, Oxford University Press Inc., 1996, p.62).

Applicants respectfully submit that Claim 1, and dependent claims thereof, are patentable over Vangermain, and the combination of Vangermain and Maskill, at least for the following reasons.

Present Claim 1 is directed to a hydrocarbon hydroconversion catalyst, comprising a medium with a base of at least one refractory oxide, alumina, silica and/or silica-alumina

containing 0.1 to 10% by weight of at least one metal of group VIII, and 1 to 20% by weight of at least one metal of group VIB on the Period Table of the Elements. The presently claimed hydrocarbon hydroconversion catalyst further comprises at least one organic compound with at least two oxime groups of the formula: > C=NOR₁, where R₁ is chosen from among a hydrogen atom, alkyl, allyl, aryl, alkenyl or cycloaliphatic groups, and combinations thereof, and one or more of these groups can be substituted by at least one electron donor group.

Vangermain discloses a catalyst comprising compounds A (including nickel dimethylglyoxime) and B, but does not disclose the use of several different compounds A mixed with one or several compounds B. Thus, Vangermain does not disclose the use of at least one refractory oxide containing (1) at least one metal of group VIII, (2) at least one metal of group VIB and (3) at least one organic compound with at least two oxime groups, as presently claimed. Thus, no claims are anticipated for at least this reason. Moreover, Vangermain clearly discloses that compounds to be used as a catalyst can contain both a metal of groups IV to VI and a metal of groups VII to VIII, and in such a case the use of a single compound is sufficient. See, e.g., col. 3, lines 56-60. Vangermain also discloses that **one** of the preferred compounds A can be used in combination with **one** other compound B. See, e.g., the preferred catalysts disclosed at col. 4, lines 30-56, and the working Examples. However, Vangermain does not disclose that nickel dimethylglyoxime can be mixed with another compound A and another compound B. Since Vangermain discloses other combinations of compounds, if such a combination was part of the Vangermain invention, it would have been disclosed.

Additionally, Vangermain also does not disclose the weight percentage of metals in the at least one refractory oxide, as presently claimed. Vangermain discloses the amounts of catalyst to be used with respect to the oxidative agent used for epoxidation (organic hydroperoxide) is from

0.1 to 3% of the catalyst system with respect to organic hydroperoxide. See, e.g., col. 5, lines 25-29. Vangermain also discloses the relative amounts of metallic compounds of groups IV to VI and metallic compounds of groups VII to VIII. See, e.g., col. 5, lines 29-34. Furthermore, all the working Examples concern homogeneous reactions in which the catalyst is **not** supported. Thus, Vangermain does not disclose the weight percentage of metals in the at least one refractory oxide, as presently claimed.

Maskill does not cure the above discussed deficiencies in Vangermain.

Accordingly, Claim 1 is patentable over Vangermain, and the combination of Vangermain and Maskill. Claims 2-5, 11-13, 17-20, and 22 are patentable, at least by virtue of their dependence from Claim 1. Thus, Applicants respectfully request reconsideration and withdrawal of the above-identified rejections.

III. Response to Claim Rejections Under 35 U.S.C. § 103 Based on Bjornson

Claims 1, 5-8, 10-13, 17-19, 21 and 22 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Bjornson (U.S. Patent No. 4,693,991) in view of Mansfield (U.S. Patent No. 5,648,305).

Claims 2-4, 9-16 and 20 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Bjornson in view of Mansfield and Maskill.

Applicants respectfully traverse.

Mansfield is directed to catalysts such as “reforming, hydrotreating, hydrocracking, isomerization, hydrogenation and guard bed” catalysts. See, e.g., col. 2, lines 21-23. However, Mansfield does not disclose a hydroconversion catalyst. Furthermore, Mansfield does not refer to the metals of the presently claimed invention.

Additionally, a person of ordinary skill in the art would not be motivated to combine the inventions of Bjornson and Mansfield, because the inventions do not fall within the same technical area. Mansfield addresses the technical problem of reducing or retarding the formation of metal contaminants of a process catalyst. See, e.g., col. 2, lines 2-8. In comparison, Bjornson addresses the technical problem of providing a new and effective zinc titanate-containing catalyst composition to hydrotreat a hydrocarbon containing feed to remove organic compounds of sulfur, nitrogen and oxygen. See, e.g., col. 1, lines 34-46.

Furthermore, it should be noted that in Mansfield the reducing agent is preferably added continuously during process flow. See, e.g., col. 4, lines 66-67. Thus, the reducing agent has a "cleaning" action on the catalyst and thus a "polluted" catalyst regains a part of its initial efficiency. As a result, the combination of Bjornson and Mansfield would lead a person of ordinary skill in the art to incorporate a compound continuously in the hydrocarbon flow to limit the pollution of the catalyst. On the contrary, in the presently claimed invention, a new catalyst results in increased efficiency, which proves that there is an interaction between the catalyst and the organic compound during the reaction. Applicants' is a completely different invention, in which the catalyst comprises and interacts with a dioxime compound in order to increase the catalyst efficiency.

Mansfield also does not teach or suggest the use of an organic compound comprising two oxime groups, as recited in present Claim 1. The use of two oxime groups as in the presently claimed invention allows for considerable lowering of the denitrogenation temperature while maintaining good desulfidation activity. See, e.g., the last paragraph of page 12 to the last paragraph of page 13, and Table II of the specification.

Mansfield does not teach or suggest such an improvement, nor does it teach or suggest the effect of the presence of two oxime groups in the catalyst activity, particularly on denitrogenation or desulfidation. Mansfield only teaches that oxime compounds comprising one oxime group permits the retardation or reduction of the formation of metal contaminants, but does not teach or suggest a relation between the retardation and reduction of the formation of metal contaminants and the denitrogenation and desulfidation activity.

Bjornson is also silent on this issue.

Thus, even if a person of ordinary skill were to combine the inventions of Bjornson and Mansfield, the presently claimed invention would not be achieved.

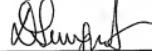
Accordingly, Claim 1 is patentable over the combination of Bjornson and Mansfield, as well as the combination of Bjornson, Mansfield and Maskill. Claims 2-5, 11-13 and 17-22 are also patentable, at least by virtue of their dependence from Claim 1. Thus, Applicants respectfully request reconsideration and withdrawal of the above-identified rejections.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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Date: November 19, 2010